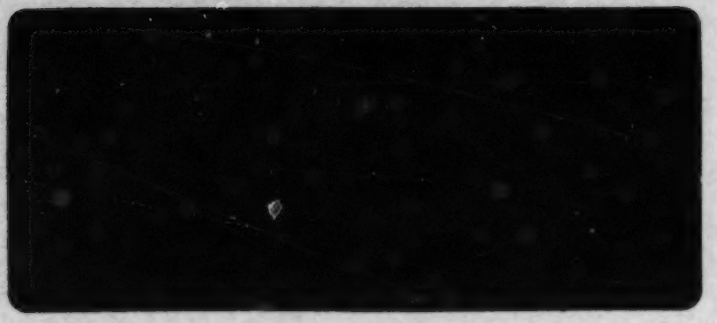
NUMBERS AND DISTRIBUTION OF THE MACKENZIE WOOD BISON HERD, MARCH 1983

Northwest Territories Resources, Wildlife & Economic Development



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NUMBERS AND DISTRIBUTION OF THE MACKENZIE WOOD BISON HERD, MARCH 1983

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ABSTRACT

Wood bison (Bison bison athabascae) surveys conducted on 25 and 26 March 1983 in the Mackenzie Bison Sanctuary and environs produced a total count of 980 bison. The area surveyed had been expanded from previous surveys and the sighting of both bison and bison cratering indicated a northerly expansion of their range. A total of 83 bison were also found farther west than ever before, approximately 40 km from the Sanctuary.

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INTRODUCTION

Since wood bison (Bison bison athabascae) were first introduced into the Mackenzie Bison Sanctuary (MBS) (Fig. 1) in 1963, surveys have been carried out to monitor the size and distribution of the population. Traditionally, the bison have occupied that portion of the Sanctuary south of latitude 61° 45'N. Herds of mixed sexes and ages have been found almost exclusively on the main dry lake basin, while mature bulls often ventured into peripheral areas. The last survey, conducted in June 1982, was restricted to the traditional range (Chowns 1982); however, this census was expanded to include searches of outlying potential habitat.

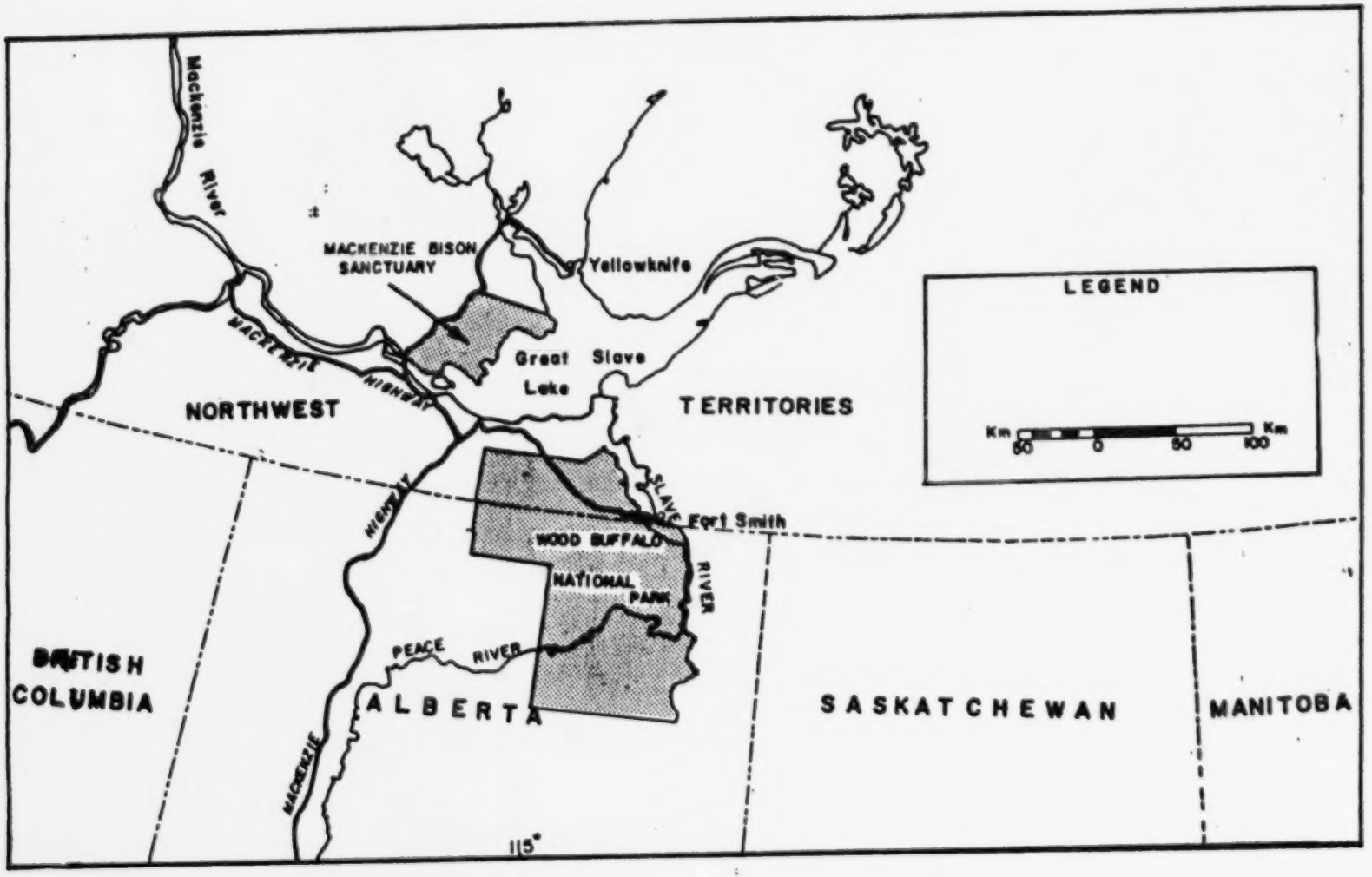

Figure 1. The location of the Mackenzie Bison Sanctuary

METHODS

The survey was conducted on 25 and 26 March 1983 using a Cessna 185 aircraft. The two principal observers were in the back seats while the navigator/recorder occupied the front right seat. Large herds of bison were photographed and later re-counted to verify the estimates made by the observers.

On the first day, meadows and lightly forested areas to the north and northwest of the traditional range were examined. During the second day, dry lake beds, other unforested areas and main travel routes of bison in the MBS south of latitude 61° 45'N, in the traditional range, were surveyed. The approximate altitude was 200 m agl over forest and small meadows, and up to 300 m agl over the larger lake basins.

Bison tracks and craterings found outside the normal range were recorded. Other large mammal sightings were recorded throughout the survey.

RESULTS

Most of the main lake basins in the traditional range contained herds of bison (Fig. 2) and we counted a total of 980 bison during the 2 day census (Table 1). The bison in the large groups were fairly tightly congregated. Although tracks were abundant throughout the area, there was no evidence of recent mass movements. On the north end of Lake 650, one dead, adult bison was located. There was no evidence of predation.

Ninety-three bison were observed west of the MBS. Eighty-three of those bison, including several cows and calves, were found in the large, unforested area east of Mink Lake.

Ten bison bulls were found in the MBS north of latitude 61 45'N (Fig.3). There were no other signs of bison activity.

A total of 28 moose (Alces alces) was encountered including a group of nine at the southeast foot of Horn Plateau. A group of three woodland caribou (Rangifer tarandus caribou) was sighted northwest of Mink Lake (Fig. 2 and 3). Actual flight lines may be found in the Appendices.

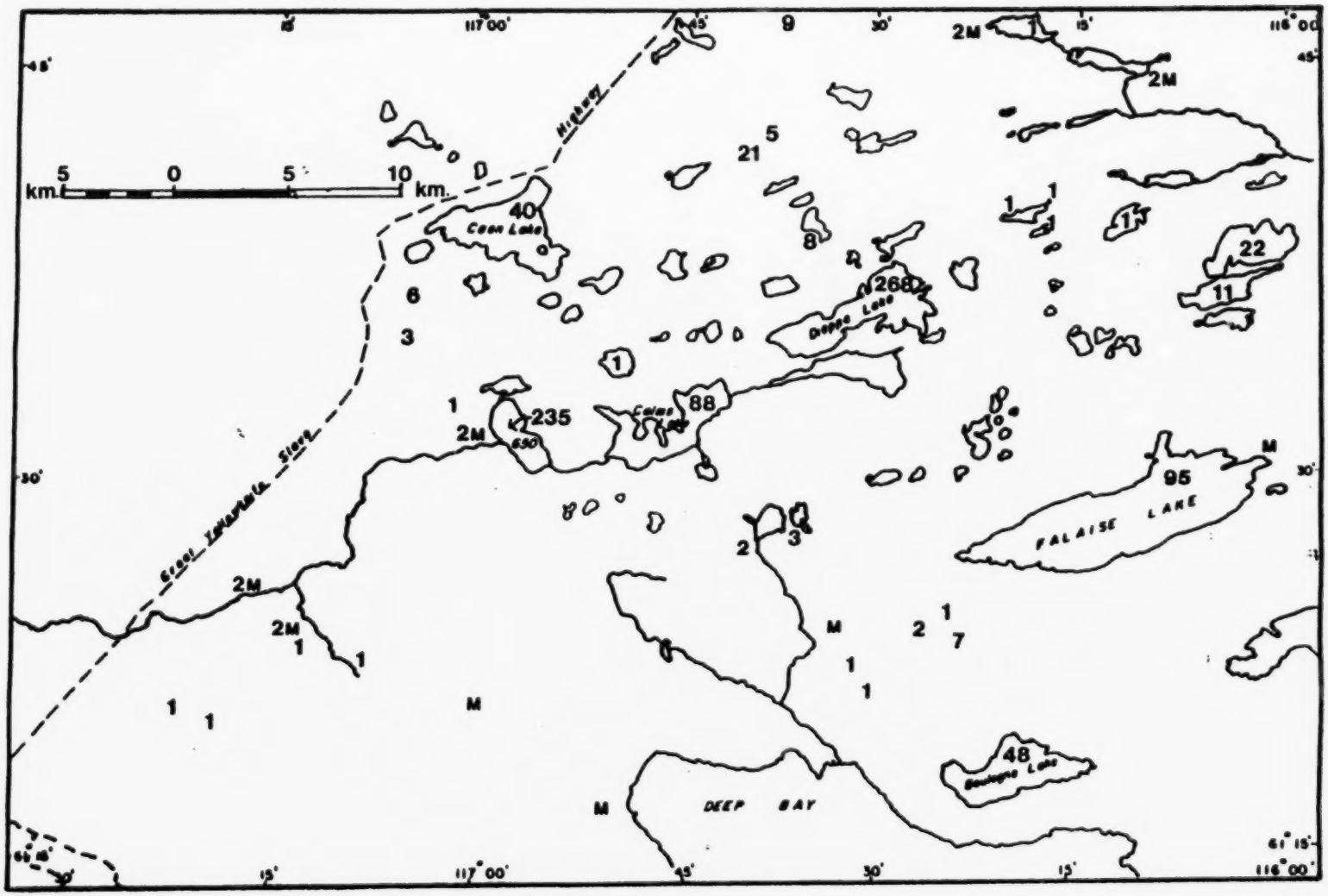

Figure 2. The locations of bison, moose (M), and caribou (C) surveyed within the traditional range of the Mackenzie Bison Sanctuary herd on 26 March, 1983

Table 1. The number of bison counted in and around the Mackenzie Bison Sanctuary on 25 and 26 March 1983.

Area	Number of bison	Number of groups	Group size	
			mean	range
Boulogne Lake	48	5	9.6	1-16
Falaise Lake	95	17	5.6	1-16
NU Lakes*	33	4	8.3	2-20
Dieppe Lake	268	4	67.0	35-88
Lake 690**	0	0	--	--
Calais Lake	88	2	44.0	16-71
Lake 650**	235	4	58.8	3-172
Caen Lake	40	4	10.0	1-34
other (inside MBS)	80	24	3.3	1-21
other (outside MBS)	93	16	5.8	1-35
Total	980	80	13.3	

* denotes lakes located at NU 4731 and NU 4935 by the Universal Transverse Mercator Grid designation.

** denotes lakes by their elevation in feet above sea level.

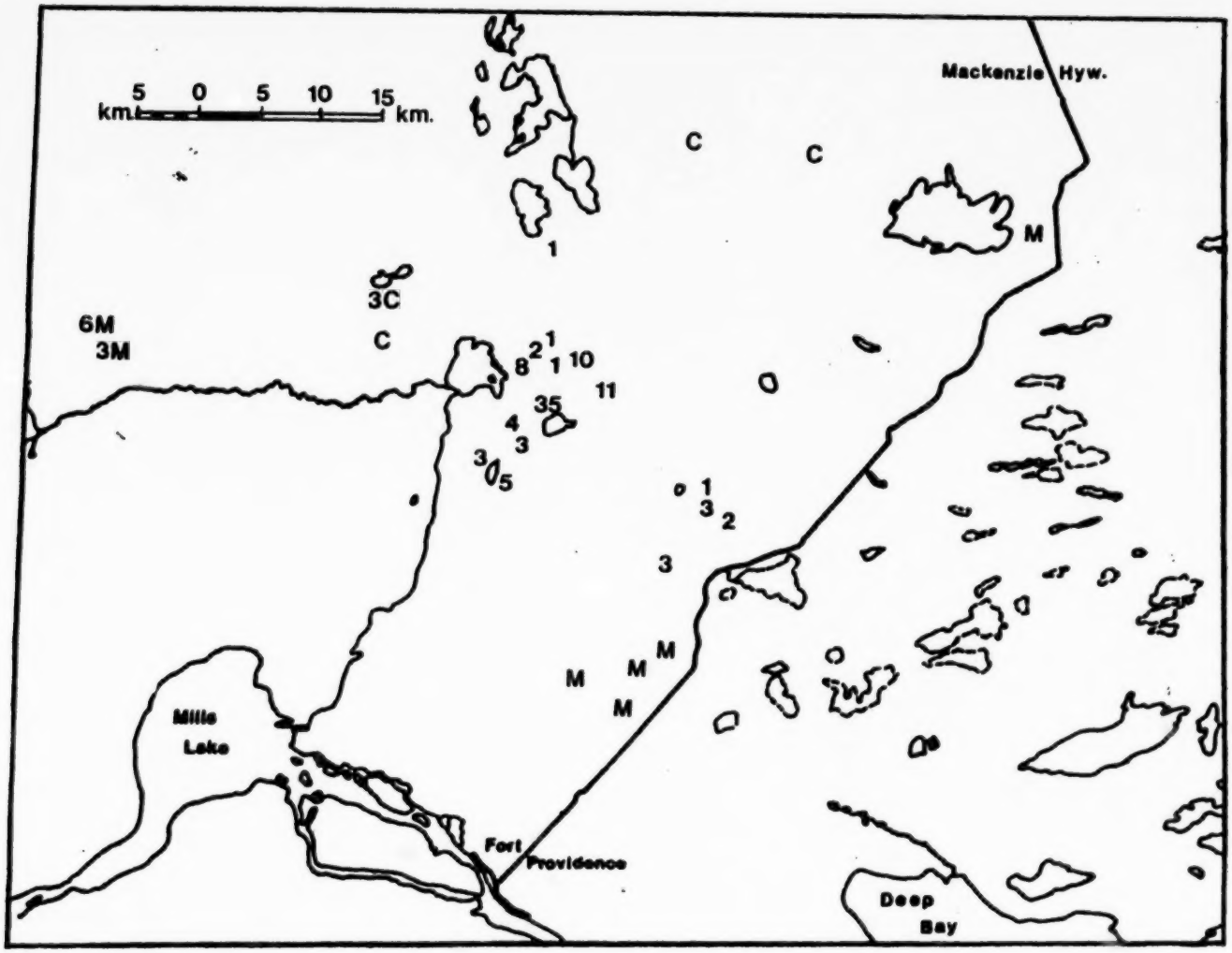

Figure 3. The locations of bison, moose (M), and caribou (C) found in areas surveyed outside the traditional range of the Mackenzie Bison Sanctuary herd on 25 March, 1983.

DISCUSSION

Bison were recorded for the first time north of latitude 61 45'N in the MBS. The large, dry lake beds in the area appear favourable for immigration of mixed herds. The sighting of nine bison within 10 km of the boundary, near Caen Lake, is not extraordinary because major concentrations were not far away. However, the feeding craters near Birch Lake (Fig. 3) represented the furthest movement of bison from the traditional range. The lone animal south of Sharun Lake occurred as both the most northerly sighting to date, and the first to be documented west of the Horn River.

The discovery of 84 animals just east of Mink Lake was a major find. Although up to 10 animals had been sighted there in 1981, the locations of close to 10 percent of the total population accompanied by cows and calves suggests a major split-off from the original core population. These animals were found in a large, unforested area, which had been swept by fire in 1980 and which extends west of Mink Lake. The fire probably removed woody vegetation and plant litter and thus favoured the growth of herbaceous plants more palatable to bison. Because little is known of the forage composition and the range is not clearly elucidated like dry lake beds, the quality and delineation of suitable habitat in this area should be studied.

Although no evidence of bison was found near the headwaters of the Laferte River or around Mills Lake, these areas appear to be good bison habitat.

Until 1975, the population had been growing at about 26 percent per annum; however, since that time it has been growing at a reduced rate (Hawley 1980). The total of 980 indicates that the population is still increasing, although this year may have been one of reduced increment. From the 15 June 1982 survey, only 12.9 percent of the bison were identified as calves. This may have been because of low natality (Chowns 1982). The low figure could also be the result of calves missed in large herds. During the past winter, predation may have been more significant considering the deep snow and a high frequency of complaints from local trappers about a perceived increase in the wolf population. On 24 March 1983 two bison short-yearlings were killed by wolves on Calais Lake and Lake 650. This constituted the first evidence of wolf predation on this bison population since its introduction in 1963.

One other possible reason for the apparent lower rate of population increase could be an even broader range expansion than this survey documented and we may still have missed some animals during the survey because they are outside the census area. It is recommended that future census surveys cover an even greater area around the Sanctuary to ensure that large groups of bison are not being missed.

ACKNOWLEDGEMENTS

We would like to thank Michael McLeod and Gilbert Bouvier of the Fort Providence Hunters' and Trappers' Association for participating as observers and Christopher Stockland of Landa Aviation for his skillful piloting of the aircraft. Thanks also go to Ray Case and Alison Welch for several helpful reviews and to Ellen Christensen and Brenda Dumas for the typing.

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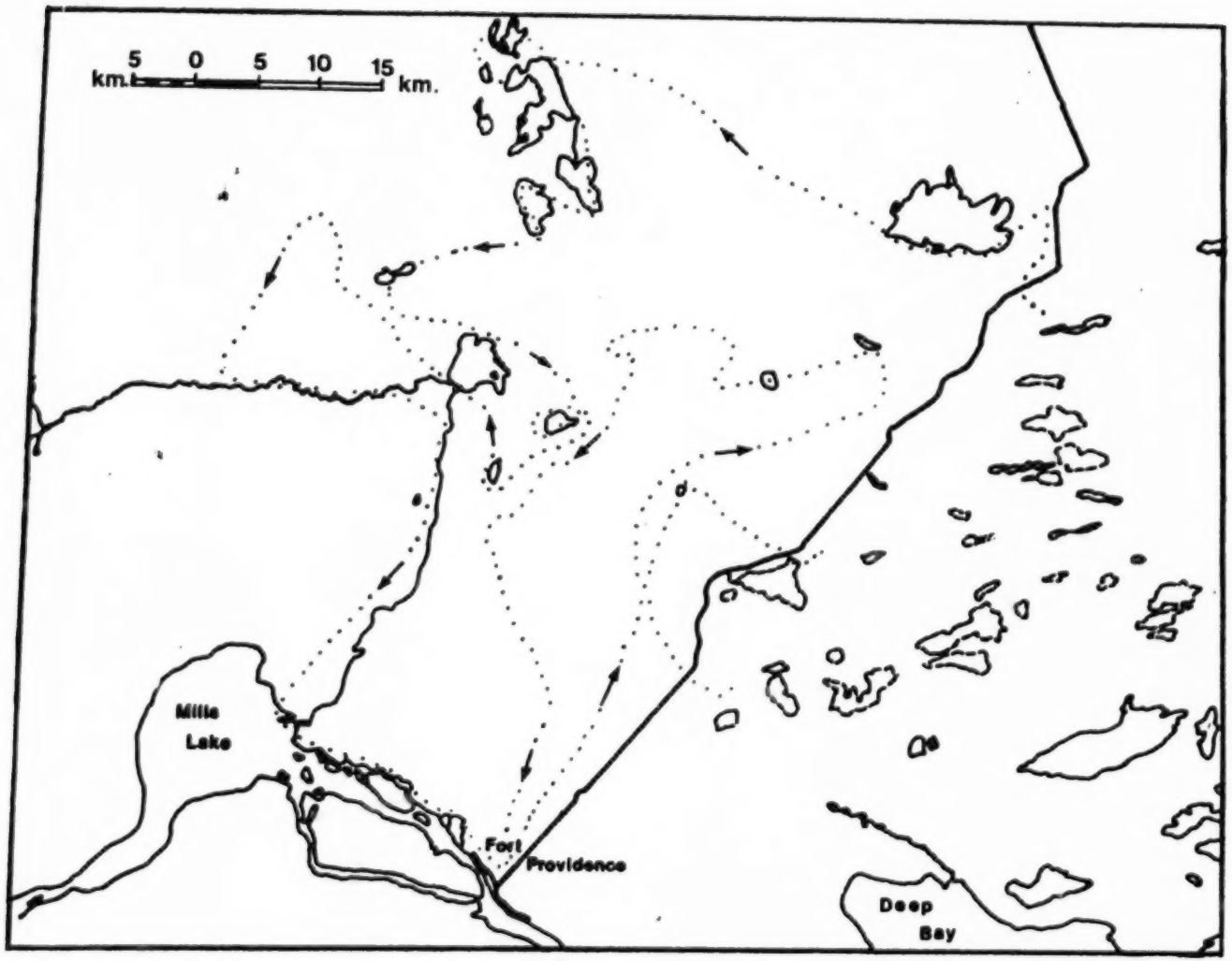
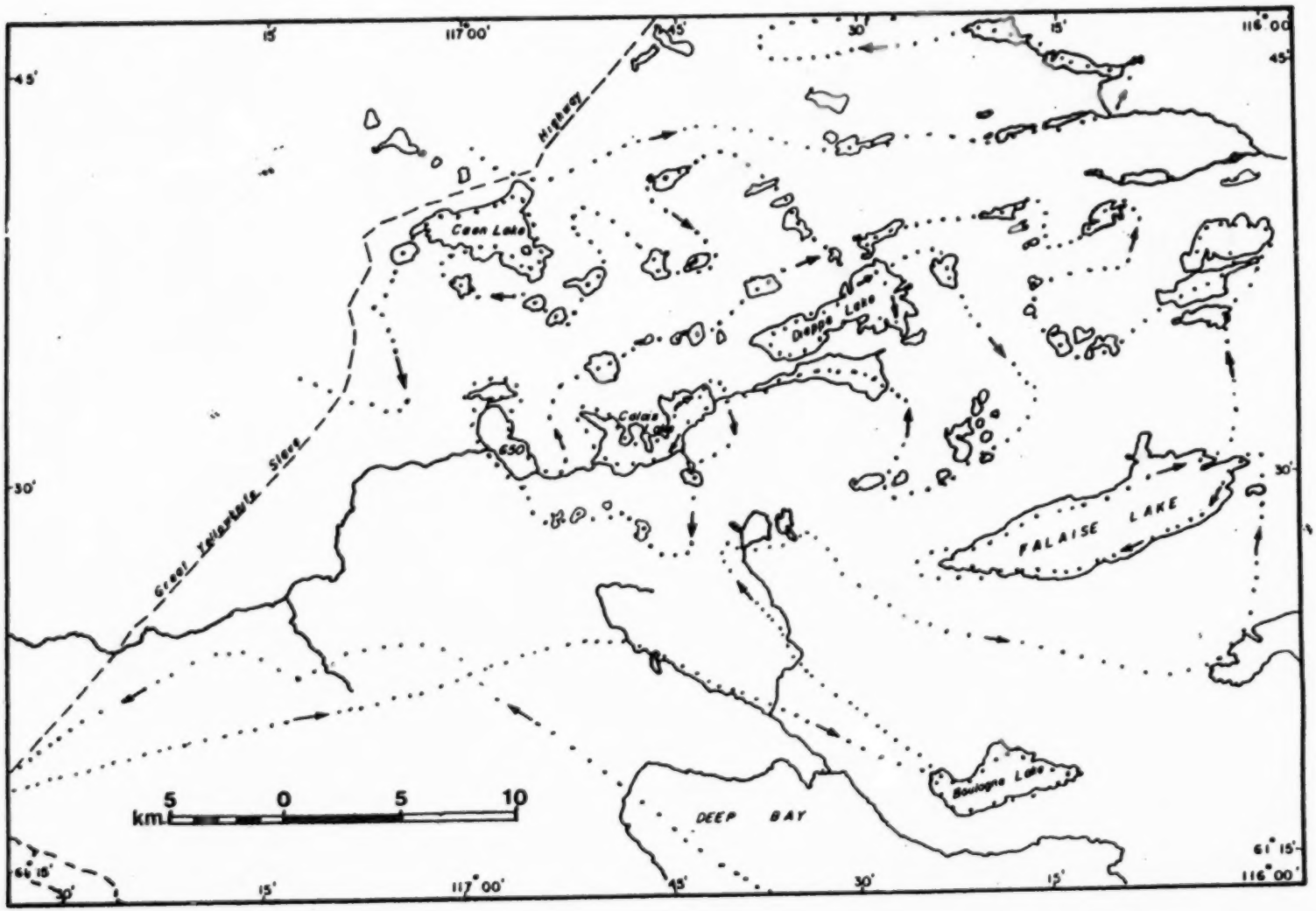


Appendix 1. The flight lines followed outside the Mackenzie Bison Sanctuary and outside the traditional range of the bison herd on March 25, 1983



Appendix 2. The flight lines followed within the traditional range of the Mackenzie Bison Sanctuary on March 26, 1983